

## RESILIENCE DEFINITIONS

### Merriam-Webster

- 1 : the capability of a strained body to recover its size and shape after deformation caused especially by compressive stress
- 2 : an ability to recover from or adjust easily to misfortune or change <emotional resilience>

### Michele Deshotels

- “Ecosystem resilience is the capacity of an ecosystem to tolerate disturbance without collapsing into a qualitatively different state that is controlled by a different set of processes. A resilient ecosystem can withstand shocks and rebuild itself when necessary. Resilience in social systems has the added capacity of humans to anticipate and plan for the future. Humans are part of the natural world. We depend on ecological systems for our survival and we continuously impact the ecosystems in which we live from the local to global scale. Resilience is a property of these linked social-ecological systems (SES). "Resilience" as applied to ecosystems, or to integrated systems of people and the natural environment, has three defining characteristics:
  - The amount of change the system can undergo and still retain the same controls on function and structure
  - The degree to which the system is capable of self-organization
  - The ability to build and increase the capacity for learning and adaptation”(The Resilience Alliance: <http://www.resalliance.org/576.php>)
- A resilient community is “one that takes intentional action to enhance the personal and collective capacity of its citizens and institutions to respond to, and influence the course of social and economic change.” (Centre for Community Enterprise)
- The Centre has identified six behaviors that a resilient community demonstrates, with the first being that “they take a multi-functional approach to create a sustainable (economically, ecologically, politically, and socially) development system with the community.” <http://www.cedworks.com/communityresilience02.html>

### More from the Resilience Alliance

- Both resilience and adaptive capacity are critical in an ecosystem context. Resilience is the ability of a system to absorb shocks, to avoid crossing a threshold into an alternate and possibly irreversible new state, and to regenerate after disturbance. Adaptive capacity is the capacity to adapt and to shape change. Adaptability is the capacity of actors in a system to influence resilience. In a social-ecological system, this amounts to the capacity of humans to manage resilience.

### Rod Emmer

- Disaster resilience is the capacity of a community that is exposed to hazards to adapt, by resisting or changing, in order to reach and maintain an acceptable level of functioning and structure. Resilience is determined by the degree to which the community is capable of organizing itself to increase its capacity for learning from past disasters. (Subcommittee on Disaster Reduction. 2005. *Grand Challenges for Disaster Reduction*. National Science & Technology Council, Committee on Environment and Natural Resources. Washington, DC: National Science and Technology Council.)

### Bob Deyle

- In the field of ecology, the definition of resilience is the ability for an ecosystem to regain its previous structural and functional state after a disturbance. Resilience is differentiated from resistance, which is the ability to avoid disturbance in the first place. I'm inclined towards a focus for this working group that focuses on both attributes for human communities, i.e. resistance and resilience.
- "Resilient social-ecological systems have the capacity to change as the world changes, while still maintaining their functionality." (Brian Walker and David Salt, *Resilience Thinking*, Island Press, 2006).

### Barbara Poore

#### **Definitions of Social and Ecological Resilience in Different Research Communities**

##### **Disaster research**

###### **Theme: Choices about the future**

"Resilience is rooted in making choices about future losses when development decisions are made. Choosing what is lost in future disasters is absolutely a new way to view those losses since it places 100% responsibility for those losses on people versus nature."

Dennis Mileti quoted in Manyena, S. B. 2006. The concept of resilience revisited. *Disasters* 30 (4): 433-450.

##### **International disaster research**

###### **Theme: Self organization**

"The capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure. This is determined by the degree to which the social system is capable of organizing itself to increase this capacity for learning from past disasters for better future protection and to improve risk reduction measures."

United Nations International Strategy for Disaster Risk Reduction. 2005. Hyogo Framework for 2005-2015: Building the Resilience of Nations and Communities to Disasters, and United Nations Interagency Secretariat of the International Strategy for Disaster Reduction (UN/ISDR). 2004. Living With Risk: A global review of the International Strategy for Disaster Reduction (UN/ISDR). Geneva, United Nations. p. 16-17.

##### **Disaster research**

###### **Theme: Community-based solutions**

"Local resiliency with regard to disasters means that a locale is able to withstand an extreme natural event without suffering devastating losses, damage, diminished productivity, or quality of life without a large amount of assistance from outside the community."

Mileti, D.S. 1999 *Disasters by Design: A Reassessment of Natural Hazards in the United States*, Joseph Henry Press, Washington, D.C.

## **Disaster research**

### **Theme: stress on the event**

“The ability to respond to singular or unique events.”

Kendra, M.J. and T. Wachtendorf 2003 Elements of Resilience After the World Trade Center Disaster: Reconstructing New York City’s Emergency Operations Center. *Disasters* 27 (1) 37-53

## **Ecology**

### **Theme: Absorbing shocks**

“It is the buffer capacity or the ability of a system to absorb perturbation, or the magnitude of disturbance that can be absorbed before a system changes its structure by changing the variables.”

Holling, C.S., D.W. Schindler, B.W. Walker and J. Roughgarden. 1995. Biodiversity in the functioning of ecosystems: an ecological synthesis. In C. Perrings, K.G. Maler, C. Folke, C.S. Holling and B.O. Jansson (eds) *Biodiversity loss: economic and ecological issues*. Cambridge University Press Cambridge pp. 44-83

## **Climate change**

### **Theme: Link between social and ecological vulnerability and resilience**

We conclude that the reduction of social vulnerability through the extension and consolidation of social networks, both locally and at national, regional, or international scales, can contribute to increases in ecosystem resilience.

Tompkins, E.L. and W.N. Adger. 2004. Does adaptive management of natural resources enhance resilience to climate change? *Ecology and Society*. 9 (2)

## **Political science**

### **Theme: Adaptation**

“The capacity to adapt existing resources and skills to new systems and operating conditions.”

Comfort, L. 1999. *Shared Risk: Complex Systems in Seismic Response*. Pergamon, New York

## **Political science, public policy**

### **Theme: Learning, bouncing back**

“Resilience is the capacity to cope with unanticipated dangers after they have become manifest, learning to bounce back.”

Wildavsky, A. 1991 *Searching for Safety*. Transaction, New Brunswick NJ

## **Popular media**

John Pope "East N.O. priest personifies resilience: Vietnamese leader preaches self-reliance"  
New Orleans Times Picayune, Sunday September 3, 2006

In this story about the resilience of the 14,000 out of 22,000 Vietnamese Catholics who have returned to East New Orleans since Katrina, resilience is not defined, but the following themes are presented:

### **Planning**

"We do have a plan," he [the priest] said. "Our plan is to return, reclaim, rebuild."

### **Self reliance**

"Our request for the government is to get out of the way. If you offer us help, we appreciate that, but don't impede us."

### **Belief and trust**

The people know that Father Nguyen is there: "They trust that, with the help of others, I am able to gauge what is going on so that I would not mislead them in the reinvestment of their lives."

### **Importance of community beliefs and traditions**

The priest as leader in times of high community uncertainty is a Vietnamese tradition